REMARKS/ARGUMENTS

Claims 2-5 and 7-19 stand in the present application, claim 4 having been amended. Reconsideration and favorable action is respectfully requested in view of the above amendments and the following remarks.

In the Office Action, the Examiner has objected to claim 4 as being improper form because it depends from itself. Applicants have corrected this deficiency by amending claim 4 to properly depend from claim 2.

The Examiner has also rejected claims 2-5, 7-9 and 11-15 under 35 U.S.C. § 102(e) as being anticipated by Chang et al. Applicants respectfully traverse the Examiner's § 102 rejection of the claims.

Chang describes a method and apparatus for processing user submitted search information to permit a database to be searched regardless of the format and language of the user submitted information. The user submitted information is first categorized into one or more categories, where each category is a type of information such as a date, a proper name or a place (see column 3, lines 35 to 40 and column 4, lines 1 to 41). For each category pertaining to the user submitted information, the search is refined by comparing the user submitted information to a feature table containing specific data types corresponding to each category. From the results of any affirmative comparison with the feature table, a starting location within a corresponding search table is retrieved (see column 3, lines 40 to 47 and column 4, lines 42 to 67). The search is further refined by comparing the user submitted information to the entries of the search table beginning at the starting location. From the results of any affirmative comparison with the search table entries a database address is obtained which is used

to obtain a database entry sought after by the user (see column 3, lines 47 to 54 and column 5, lines 1 to 17).

It should be apparent from the above description that Chang relates to the processing of user submitted search information prior to searching and retrieving information from a database. As will be apparent from the following description of Applicants' invention, Chang presents a wholly different concept from Applicants' invention.

Present independent claims 2 and 7 recite a method of generating an index entry for a record that is already stored in a semi-structured database, and a corresponding apparatus. Thus, an important distinction from Chang is that these claims are directed towards the actual method of generating an index entry for a record in a semi structured database and comprise, *inter alia*, the steps of searching each field of each record of a semi-structured database to identify sequences of characters which have a format corresponding to one of a number of predetermined formats and, for those fields which do not have such a format, defining the characters within those fields as a free text entry. The only time Chang ever speaks of a database is in relation to database addresses and entries that correspond to those database addresses.

There is simply no teaching or suggestion in Chang of analyzing each field of each record of a database in accordance with a predetermined criterion to identify an entry within each field. The portions of Chang cited by the Examiner in relation to this claim feature discuss the categorization and analysis of a search inquiry. The search inquiry is submitted by a user and is neither part of a record nor part of a database.

Moreover there is no teaching or suggestion in Chang of searching one or more

fields of a record stored in a database in order to identify a sequence of characters having a format corresponding to one of a number of predetermined formats; neither is there any teaching or suggestion of defining any characters in a field of a record stored in a database as a free text-entry. The portions of Chang cited by the Examiner in relation to these claim features discuss the categorization of a user-submitted search inquiry, the refining of the search inquiry using feature tables and search tables in order to identify the database address sought after by the user, the categories/sub-categories used by Chang and the mappings of feature table entries to locations within a search table. There is simply no discussion in these portions of defining characters as a free text entry.

For at least the above reasons, Applicants respectfully submit that independent claims 2 and 7 patentably distinguish over Chang and are therefore neither anticipated nor rendered obvious thereby.

Turning now to the apparatus claim 11, this claims an apparatus for accessing a semi-structured database comprising, *inter alia*, input means for receiving a request for information, the request comprising a natural language phrase, a parser for parsing the natural language phrase, a slot for allocating components of the parser request to respective slots of a slot-and-filler request, and a query constructor for accessing the data store in dependence on the allocated components in the slot-and-filler request. Thus, the invention as claimed is directed towards a database access mechanism which takes natural language phrases as input (such as the phrase "I want a plumber for my boiler, who takes VISA in Ipswich", the example phrase used in the description), and which then parses the natural language phrase to determine various verbs, nouns,

prepositions etc., within the phrase. The parsed request is then passed to the slot filler which uses the part of speech classifications given to the words within the request to allocate various words within the request to appropriate slots of a slot and filler request Thus, for example, where the various slots are "transaction", "goods", "payment', "opening", "street", and "location", as in the embodiment, the nouns plumber and boiler may be allocated to the "goods" slot, the noun "Ipswich" once identified as a place is allocated to the "location" slot, etc. Having constructed such a slot-and-filler request, the query constructor then compares the allocated words within each slot to index entries within a group corresponding to the slot of each allocated word so as to identify index entries corresponding thereto, and to subsequently identify items within the semi-structured database corresponding to the index entries. This therefore allows different indices corresponding to the different slots for which words in the natural language phrase have been allocated to be searched, to identify potentially relevant items in the database.

The above described operation of Applicants' invention differs significantly with that of Chang. Chang does not teach or suggest a slot filler arranged to allocate components of the parsed request to a slot-and-filler request, nor does Chang teach or suggests a query constructor which makes use of the allocated components to identify corresponding index entries and subsequent items in the semi-structured database. The portions of Chang cited by the Examiner in relation to these claim features merely describe the characterization of a user submitted search inquiry to identify a corresponding feature table, comparing the search inquiry with entries in the feature table in order to identify a starting location in a search table, comparing the search

inquiry with entries in the search table in order to obtain the address of a database entry to return to the user, the categories/sub-categories used by Chang and the mappings of feature table entries to locations within a search table. As a consequence of these significant patentable distinctions, claim 11 is also neither anticipated nor rendered obvious by Chang.

The remaining claims (claims 3-5, 8-9, 12-15 and 19) are all dependent on one of the aforementioned independent claims and are, therefore, novel and inventive over the prior art of record at least by virtue of their dependencies.

The Examiner has also rejected claims 10 and 16-18 under 35 U.S.C. § 103(a) as being unpatentable over Chang et al. in view of Wical et al. Applicants respectfully traverse the Examiner's § 103 rejections of the claims.

As noted above, Chang neither teaches all the features of claim 2 (upon which claim 10 depends by virtue of the dependence of claim 10 on claim 5 and claim 5 on claim 2) nor does it teach all the features of claim 11 (upon which claims 16-18 depend). Claims 10 and 16-18 are, therefore, novel and inventive by virtue of their dependencies. All of these claims include the claim feature of a 'slot filler'. In relation to claims 10 and 18, the claims require that if the slot-and-filler request includes no verb components, the slot filler determines any components to be object components. Claim 16 requires a predetermined mapping between verb components and slots of a slot-and-filler request while claim 17 requires a predetermined mapping between subject components and slots of a slot-and-filler request. The portions of Wical cited by the Examiner do not discuss any of these claim features. Column 69, lines 17-62 discusses the attachment of additional modifying information to verbs, column 73, lines 5-67 merely contains a list

of routines necessary to assess the overall theme of a sentence and column 83, lines 1-6 merely contains a list of routines for searching for particular grammatical or thematic relationships. Therefore, it is respectfully submitted that the Examiner has failed to establish a prima facie case of obviousness against these claims.

Therefore, in view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all of claims 2-5 and 7-19, standing in the application, be allowed and that the case be passed to issue. If there are any other issues remaining which the Examiner believes could be resolved through either a supplemental response or an Examiner's amendment, the Examiner is respectfully requested to contact the undersigned at the local telephone exchange indicated below.

Respectfully submitted,

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